(January 3, 2011)

Cable Net Slope Protection Construction Requirements

Submittals

The Contractor shall submit a cable net slope protection plan to the Engineer for approval in accordance with Section 6-01.9. The cable net slope protection plan shall include the following:

1. Identification of the supplier of the cable nets. The cable net supplier shall either be listed in the WSDOT Qualified Products List (QPL) or the WSDOT New Products List, or if not listed in the WSDOT QPL or WSDOT New Products List, the submittal shall include written documentation demonstrating satisfactory performance of cable nets furnished by this supplier in projects completed for other agencies in similar site conditions.

2. An inclusive list with catalogue cuts for the appurtenances to be used for the anchors, support system, seaming panels, wire mesh fasteners, anchor bars, grout, wire rope, clips, thimbles, ferrules, steel rings and other fastening hardware.

3. Mill certificates for the wire rope.

4. A 3'-0" square physical sample of the PVC coated wire mesh in the specified color.

5. The Contractor's plan for installing anchors for the cable net slope protection, and the equipment and process to be used to confirm the capacity of the constructed anchors. The calibration data for the stressing devices used to proof test the anchors, as completed by an independent testing laboratory within 60 calendar days of the submittal date of the cable net slope protection plan to the Engineer, shall be included.

6. Working drawings for the temporary yoke or load frame to be used for anchor proof testing.

7. The Contractor's plan for assembling the cable nets and wire mesh, and erecting the assembled nets on the slope.

The Contractor shall not begin cable net slope protection operations until receiving the Engineer's approval of the cable net slope protection plan.

Cable Net Slope Protection Assembly

The cable net panels shall conform to the following criteria:

Panel Size:	approximately 12 feet by 25 feet
Grid Size:	no larger than 12 inches by 12 inches
Interior and Perimeter Rope:	no smaller than 5/16 inch diameter

Cable nets shall be fabricated with a perimeter rope. Interior wire rope junctions shall be bound with either double knots of 1/8 inch diameter corrosion resistant wire, or high-strength, corrosion resistant clips with slotted bottoms made from 0.08 inch thick plate. All perimeter-interior wire rope junctions shall be bound with corrosion resistant ferrules.

Clips and ferrules shall be pressed on and tie wires knotted so as not to slip when manually stretched or during the placement of the nets. Clips and ferrules shall be secured in the manner intended by the manufacturer while not damaging the wire ropes. Cable net assemblies showing signs of slight damage as determined by the Engineer will be subject to rejection.

Cable Net Slope Protection Installation

Cable net slope protection shall be installed in accordance with the details shown in the Plans.

Anchors and the top horizontal support rope shall be located a minimum of 15 feet beyond the slope crest, at locations receiving the Engineer's approval.

Anchors shall achieve the specified anchor capacity in vertical pullout. If double anchors are used, they shall be installed to ensure equal load distribution to both anchors, and each anchor shall achieve 60 percent of the specified anchor capacity in vertical pullout. For vertical pullout proof testing, an anchor is acceptable if it sustains the specified capacity for 10 minutes with no loss of load. Anchors that fail this criterion shall be replaced and retested at no additional expense to the Contracting Agency. For Type 1 cable net slope protection, up to 25 percent of the support rope anchors shall be proof tested. For Type 2 cable net slope protection, all support rope anchors shall be proof tested. Up to 25 percent of the side and back anchors shall be proof tested at the discretion of the Engineer. If more than three anchors fail, the Contractor shall proof test all anchors.

Proof testing of anchors shall be performed against a temporary yoke or load frame. No part of the temporary yoke or load frame shall bear within three feet of the anchor being tested.

Unless otherwise specified in the Plans, the wire mesh shall be placed on the outside of the cable net panels, and lapped and fastened as detailed in the Plans. With the exception of vertical seaming of the net panels, the wire mesh shall be connected to the cable net panels as shown in the Plans prior to placement on the slope.

All galvanized steel with exposed steel or damaged galvanizing shall be repaired in place after erection of the cable net slope protection in accordance with Section 6-07.3(9)I with paint conforming to Section 9-08.1(2)B.